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IDENTIFIERS	*CDA: Child Development Associate

ABSTRACT

This Child Development Associate (CDA) training module is intended to teach CDA interns how to provide classroom experiences that promote basic mathematics skills in preschool children. Knowledge of relationships of objects in space, grouping of objects, teaching of number names and counting, and the use of math games are discussed. The trainee is encouraged to learn how to plan and develop lessons, games, activities and environmental conditions to teach about objects and their location in space. Both teacher and trainee materials are provided in the module. Teacher materials consist of directions for pre-testing and field supervision, a resource person activity list and directions for each student activity. Trainee materials include pre- and post-tests, an activity record, a glossary, directions and 17 lessons. (Author/RH)

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CHILD DEVELOPMENT ASSOCIATE TRAINING PROGRAM

UNIT III

DEVELOPMENT OF COGNITIVE SKILLS IN YOUNG CHILDREN

Module 4

BEGINNING MATH DEVELOPMENT WITH YOUNG CHILDREN

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THE CHILD DEVELOPMENT ASSOCIATE TRAINING PROJECT

Unit III

DEVELOPMENT OF COGNITIVE SKILLS IN YOUNG CHILDREN

Module 4

BEGINNING THE DEVELOPMENT OF MATHEMATICAL SKILLS WITH YOUNG CHILDREN

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A Joint Project Of: Community College of Philadelphia
Research For Better Schools, Inc.
School District of Philadelphia

Unit III

Module 4

COMPETENCIES

1. The trainee can provide experiences which foster the ordering of objects by color, shape, size, number and function.

2. The trainee can provide experiences which foster the comparision of objects with other objects, attributes, and symbol representation.

3. The trainee can provide unstructured opportunities for the above experiences in the classroom.

Unit III

Module 4

INSTRUCTIONAL OBJECTS

Entry Level

The trainee will know what objects and the location of objects in space are, their relationships and the names for them.

The trainee will know what grouping objects is, how to compare and contrast them, and what one-to-one relationships are.

The trainee will know what numbers mean for preschool children, what number names to teach and what to do about rational counting.

The trainee will know the three major kinds of math games that are used to help develop young children develop their mathematical skills.

Intermediate Level

The trainee will know how to plan and develop lessons, activities and environmental conditions to teach about objects and location of objects in space.

Unit III

Module 4

The trainee will know the reasons for grouping objects and one-to-one relationships and how to plan for the provision of appropriate experiences.

The trainee will know how to plan and develop lessons, activities, and environmental conditions to teach number names and rational counting.

The trainee will know how to plan and make a game that helps preschool children develop a mathematical skill.

Mastery

The trainee will teach a lesson and an original game which will give children an understanding of objects and location of objects in space.

Unit III

Module 4

BEHAVIORAL OBJECTS

Entry Level

The trainee will be able to identify games that can be used to help children develop an understanding of objects and location of objects in space.

Intermediate Level

The trainee will be able to plan and make a game that will help preschool children develop an understanding of objects and location of objects in space.

Mastery

The trainee will be able to plan and teach a lesson and an original game which will give children an understanding of objects and location of objects in space.

Unit III

Module 4

Trainee Directions

PRETEST

If ... you think you may already know how to do the things in this module:

1. See the Resource Person and describe why you think you may already know how to do these things.

2. Review the Pretest with the Resource Person and decide with the Resource Person if you will try it.

If ... you do not wish to take the Pretest, or do not know how to do these things:

1. Fill out the Cover Sheet for this Module.

2. Read the Glossary.

3. Begin work on Activity 1.

Unit III

Module 4

Resource Person Directions

PRETEST

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M3-PT

Box of Materials

File Cards

Resource Person

Box of materials:

- Construction paper (various colors)
- Felt
- Glue
- Plastic containers
- Cardboard cylinders
- Magazines
- Magic markers
- Heavy cardboard
- Contact paper

Unit III

Module 4

Resource Person Directions

Pretest (cont.)

Large beads

String

Magnet

Scissors

Paste

Blocks

Assorted objects

File Cards

DIRECTIONS

Trainee

1. Read and follow the directions in the pretest.

2. Do not go on to Part Two until your Resource Person tells you to do so.

Unit III

Module 4

Resource Person Directions

Pretest (cont.)

Resource Person

1. Read the Pretest.

2. The Pretest is divided into two parts. Trainee cannot go on to Part Two until you have reviewed Part One and and the trainee meets certain criteria.

3. Mastery criteria for Part One:

   . Item A - Correct answers 2, 3, 5, 8, 9;
   Each correct answer is worth 2 points;
   * Total number of points - 10

   . Item B - Correct answers - 1.D, 2. B, each correct answer is worth 3 points.
   * Total number of points - 6

   . Item C - 1. The math skill must be one taught to young children; 4 points. (See Activity 15 for list)

Pretest (cont.)

2. The plan for the math game - 10 points
(Must meet the criteria stated in Item #3 of the Resource Person Directions in Activity 16.)

3. The game the trainee has made - 10 points.
The game must go along with the plan and it must conform to all the things to be kept in mind listed in Activity 16.

* Total number of points for Item C - 24

Item D- 1. The lesson plan must be on the same skill as the game.

2. The lesson plan must help the children develop the skill

* Total number of points for Item D - 20 (Must have both parts 1 and 2)

Pretest (Cont.)

4. Total number of points for Part One - 60. Trainee must have 55 points to go on to Part Two.

5. If trainee has 55 points, give him a file card and a sheet of paper. Have him place his plan for a game on the file card. Have him write his lesson plan on the sheet of paper. Let him keep the game he has made, he will need it in Part Two.

6. Notify the trainee's Field Supervisor that he has successfully completed Part One of the Pretest.

7. If a trainee does not have at least 55 points, tell him he will have to complete the module.

Unit III

Module 4

Field Supervisor Directions

PRETEST

DIRECTIONS:

1. Read the Pretest and be familiar with Part Two.

2. Check with Resource Person to make sure trainee has satisfied the criteria in Part I.

3. Trainee will notify you of day and time to observe.

4. Trainee will give you a copy of the lesson plan and plan for a game before you observe.

5. Criteria for mastery of Part Two.

   A. The Lesson

      . Use the observation sheet on the next page as criteria for mastery of the lesson.

      * Total number of points - 20.

Unit III

Module 4

Field Supervisor Directions

OBSERVATION FORM

NAME: _____

DATE YOU OBSERVED: _____

---

1. What was the lesson about? _____

_____

_____

2. Write an objective for the lesson _____

_____

_____

3.

A. Did the children learn what the teacher wanted them to?

_____Yes _____No

B. How do you know? _____

_____

_____

Pretest

C. If there were one or two children who did not learn, what did the teacher do about it?

_____

_____

_____

_____

_____

_____

_____

5. Did the teacher feel that the lesson worked?

_____Yes _____No

Field Supervisor Directions

Pretest

B. The Game

- Does the game teach the skill the trainee stated?

- Does the objective meet the skill the trainee stated it was going to teach?

- Is the game fun?

- Can the children play the game?

* Total number of points - 20.

6. Total number of points for Part Two - 40.

7. Get the total number of points for the trainee for Part One from the Resource Person. Add the total for Part One

Pretest (cont.)

to the total to Part Two. Trainee must have a combined score of 85 or above to have mastered out of the Pretest.

8. Notify the Resource Person of the:
   - trainee's score for Part Two
   - trainee's score for Pretest

9. If trainee has mastered out of the Pretest, tell him to go on to the next module.

10. If trainee has not mastered out of the pretest, tell him to see his Resource Person so that she can tell him what activities he will need to do in the module.

Unit III: Development of Cognitive Skills In Young Children

Module 4: Beginning The Development of Mathematical Skills With Young Children

NAME _____

DATE _____

PLACEMENT TEST

Time Started _____

Time Finished _____

Mastery _____

No Mastery _____

Resource Person _____

Unit III

Module 4

Trainee Directions

PRETEST

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M3-PT

Box of materials

DIRECTIONS

1. Read and follow the directions in the pretest.

2. Do not go on to Part Two until your Resource Person tells you to do so.

Unit III

Module 4

PRETEST

This pretest is divided into two parts. Read and follow the directions for each part.

PART ONE

You will have three hours to complete this part of the Pretest.

A. Below is a list of items. Some are math skills and some are not. Read the list of items. Place a check to the left of each item which is a math skill that is developed with young children.

_____1. Adding numbers

_____2.. Rational counting

_____3. What objects are

____ 4. Subtraction

____ 5. Location of objects

_____6. Tying a shoe

_____7. Playing house

_____8. Matching objects

_____9. Shapes

Unit III

Module 4

Pretest

B. Fill in the blanks. Read each sentence and fill in the blank with the missing word or words.

1. Mathematics is _____.

   A. learning numbers
   B. adding and subtracting
   C. solving problems
   D. combination of a,b,c
   E quantifying of objects

2. Mathematics in the preschool is _____.

   A. not taught
   B. about objects and the locations of objects in space
   C. counting numbers

C. 1. Get the box of materials from your Resource Person. It contains all kinds of materials and things.

Unit III

Module 4

Pretest

2. Plan a math game that you can use with preschool children. Write your plan in the space, below. Write the mathematical skills you will help children develop with this game in the correct space below.

3. Then make the game that you have planned. Use the box of materials you got from your Resource Person to make the game.

- -

Math Skill: _____

PLAN:

Unit III

Module 4

Pretest

D. Write a lesson plan that will help children learn the same skill that you used for planning your game. Write your lesson plan below:

Unit III

Module 4

Pretest

This is the end of Part One. Give everything to your Resource Person. You can go on to Part Two only when your Resource Person tells you to.

Pretest (cont.)

PART TWO

Your task is to teach the lesson that you planned in Part One and to teach the game that you planned and made in Part One.

Make arrangements with your head teacher or center supervisor to do these things. Make sure you show them your lesson plan and game. Notify your Field Supervisor of the day and time or times that you will be doing these things so she can observe you.

Give your Field Supervisor a copy of your lesson plan and your plan for a game before you begin to do either of these two things.

Unit III

Module 4

RESOURCE PERSON ACTIVITY LIST

ACTIVITY	ESTIMATE TIME FOR COMPLETION	MATERIAL	EQUIPMENT
1. Introduction		Activity Folder U3-M4-A1	
2. Learning About Objects		Activity Folder U3-M4-A2	
3. What Are Objects		Activity Folder U3-M4-A3	
* 4. Learning To See Objects: Likes And Differences		Activity Folder U3-M4-A4	Manila Envelope
5. Location Of Objects		Activity Folder U3-M4-A5	File Cards
6. Describing Objects According To Shape		Activity Folder U3-M4-A6	File Cards
7. Field Activity		Activity Folder U3-M4-A7	
* 8. Grouping Objects		Activity Folder U3-M4-A8	Magazines Scissors Paste

*Please turn to Page 46 for special instructions.

Unit III

Module 4

ACTIVITY	ESTIMATE TIME FOR COMPLETION	MATERIAL	EQUIPMENT
* 9. Grouping Objects: Alike And Different		Activity Folder U3-M4-A9	Box of building blocks
*10. Matching Objects		Activity Folder U3-M4-A10	
11. Field Activity		Activity Folder U3-M4-A11	
12. Learning Number Names		Activity Folder U3-M4-A12	
13. Rational Counting (Part I)		Activity Folder U3-M4-A13	Box of Building Blocks
14. Rational Counting (Part II)		Activity Folder U3-M4-A14	Magazines Scissors Paste
15. What We Have Learned		Activity Folder U3-M4-A15	
16. Planning And Making A Mathematics Game		Activity Folder U3-M4-A16	File Cards
Mastery Field Activity		Activity Folder U3-M4-A17	

*Please turn to Page 46 for special instructions.

Unit III

Module 4

Resource Person Directions

ACTIVITY 1 - INTRODUCTION

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A1

Resource Person

None

DIRECTIONS

Trainee

Read the activity by yourself

Resource Person

Be available to answer questions

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person is / (is not) needed

Resource Person Directions

ACTIVITY 2 - LEARNING ABOUT OBJECTS

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A2

Resource Person

None

DIRECTIONS

Trainee

1. Read the activity by yourself

2. Follow the directions in the activity.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) is not needed

Resource Person Directions

Activity 2 (cont.)

DIRECTIONS

Resource Person

1. Be available to answer questions.

2. Review the chart with the trainee.

3. Each block should contain a statement that tells how the skills would be taught at the particular time.

Unit III

Module 4

Resource Person Directions

ACTIVITY 3 - WHAT ARE OBJECTS?

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A3

File Cards

Resource Person

File cards

DIRECTIONS

Trainee

1. Read the activity by yourself and follow the directions.

2. Go over the chart with your Resource Person when you have finished.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) is not needed

Unit III

Module 4

Resource Person Directions

Activity 3 (cont.)

Resource Person

1. Be familiar with the activity.

2. Review the chart with the trainee:

   - The items listed in Column A should tell how or what objects it would help children identify.

   - The cognitive skill or skills listed in Column B should go along with the items in Column A.

Unit III

Module 4

Resource Person Directions

ACTIVITY 4 - LEARNING TO SEE OBJECTS: LIKES AND DIFFERENCES

EQUIPMENT AND MATERIALS:

Trainee

Activity Folder U3-M4-A4

Manila Envelope

Resource Person

Manila Envelopes

DIRECTIONS:

Trainee

1. Read the activity by yourself.

2. Do the exercises in this activity.

(Continued on next page)

MODE OF INSTRUCTION

Individual

Small Group

Resource Person is / is not needed

Unit III

Module 4

Resource Person Directions

Activity 4 (cont.)

Trainee (cont.)

3. Go over Exercise B with your Resource Person when you have finished it.

Resource Person

1. Be available to answer questions.

2. Review Exerice B with the trainee, when he has finished it. The exercise should contain the following information.

   - Item #1 - The lesson, activity, an environmental condition must be about how objects are alike.

   - Item #2 - The lesson, activity, an environmental condition must be about how objects are different.

   - Item #3 - Trainee must tell how he would help children learn how objects are alike or different.

Resource Person Directions

Activity 4 (cont.)

Resource Person

3. For each thing that has a check next to it, have the trainee tell how it will help children learn what objects are.

Activity 4 (cont.)

INFORMATION FOR RESOURCE PERSON ON EXERCISE A

CONTENTS OF MANILA ENVELOPES

A. One small paper square - tan

. Task - Find and list the objects in the room that are the same color

B. One rectangular shape cork

. Task - Find and list the objects in the room that have the same shape.

C. Three tooth brushes of different sizes

. Task - Find out how the objects are alike and how objects are different.

D. One square, one triangle, one circle, one rectangle all the some color in a small envelope

. Task - Find how these objects are alike and how these objects are different.

Activity 4 (cont.)

E. One toy car or truck with wheels

. Task - List all the toys that a preschool child plays with that have wheels.

Unit III

Module 4

Resource Person Directions

ACTIVITY 5 - LOCATION OF OBJECTS

EQUIPMENT AND MATERIALS

Trainee:

Activity Folder U3-M4-A5

Resource Person:

None

DIRECTION:

Trainee

1. Read this activity by yourself.

2. Do the exercise.

(Continued on next page)

MODE OF INSTRUCTION

(Individual)
Small Group
Resource Person (is) needed
is not

Resource Person Directions

Activity 5 (cont.)

Trainee (cont.)

3. When you have finished the exercise, go over it with your Resource Person.

Resource Person

1. Be available to answer questions.

2. Review the exercise with the trainee when she has finished.

3. In the exercise:

   . Item #1 - Go over the list of words to make sure the words are those that tell where objects are in space.

   . Item #2 - Review the lesson plan to make sure it is teaching children a word or words which tell where objects are in space.

Unit III

Module 4

Resource Person Directions

Activity 5 (cont.)

Resource Person

- Item #3 - If trainee has answered yes to one of the questions, have the trainee explain how.

- Item #4 - Review the lesson plan to see if it does teach children the skills the trainee has answered "Yes" Make sure the trainee's explanation is consistent with the lesson plan.

Unit III

Module 4

Resource Person Directions

ACTIVITY 6 - DESCRIBING OBJECTS ACCORDING TO SHAPE

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A6

File Cards

Resource Person

File cards for trainees

DIRECTIONS

Trainee

1. Read the activity by yourself.

2. Do the exercise.

(Continued on next page)

MODE OF INSTRUCTION

(Individual)
Small Group
Resource Person (is) is not needed

Unit III

Module 4

Resource Person Directions

Activity 6 (cont.)

Trainee (cont.)

3. Review the exercise with your Resource Person.

Resource Person

1. Be familiar with the activity.

2. Be available to answer questions.

3. Review exercise with trainee. Make sure the trainee has appropriate lessons, activities and environmental conditions.

Unit III

Module 4

Field Supervisor Directions

ACTIVITY 7 - FIELD ACTIVITY

PURPOSE OF ACTIVITY

1. To provide trainees with an opportunity to use the knowledge and information they have acquired in developing mathematical skills with young children.

2. To make trainees aware of the many mathematical games that can be used to help children begin to develop skills.

PROCEDURES

1. Be familiar with the activity.

2. Be available to answer questions.

3. Review the list of games. Try to ascertain from the trainee how each game helps the children develop a particular mathematical skill.

Unit III

Module 4

Resource Person Directions

ACTIVITY 8 - GROUPING OBJECTS

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4 A8

Resource Person

Magazines (1 per trainee)

Scissors and paste

DIRECTIONS

Trainee

1. Read the activity by yourself.

(Continued On Next Page)

MODE OF INSTRUCTION

(Individual)
Small Group
Rescurce Person (is) needed
is not

Unit III

Module 4

Resource Person Directions

ACTIVITY 8 - GROUPING OBJECTIVES

Activity 8 (cont.)

2. Follow the directions.

3. Review Exercise A with your Resource Person, when you have finished it.

Resource Person

1. Be available to answer questions.

2. Review Exercise A with the trainee. Check and be sure that each item helps children learn how to group objects. If it doesn't, have trainee repeat that part or all of the exercise.

Unit III

Module 4

Resource Person Directions

ACTIVITY 9 - GROUPING OBJECTS: ALIKE AND DIFFERENT

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A9

Box of building blocks

Resource Person

Box of building blocks

DIRECTIONS

Trainee

1. Read the activity by yourself.

2. Follow the directions.

(Continued on next page)

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) / is not needed

Unit III

Module 4

Resource Person Directions

Activity 9 (cont.)

Resource Person

1. Be available to answer questions.

2. Be available to check the trainee's groups of objects.

Unit III

Module 4

Resource Person Directions

ACTIVITY 10 - MATCHING OBJECTS

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A10

Manila envelope

File Cards

Resource Person

Five manila envelopes

Answer key

File cards

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) is not needed

(Continued on next page)

Unit III

Module 4

Resource Person Directions

Activity 10 (cont.)

DIRECTIONS

Trainee

1. Read the activity by yourself.

2. Follow the directions in the activity.

Resource Person:

1. Be available to answer questions.

2. Dispense the manila envelopes.

3. Each manila envelope is numbered and the answer key has the same number. Use the answer key to check to see if trainee can match the objects in the manila envelope. The answer key is included in this activity. Trainee cannot go on in this activity until he can match the objects in the envelope.

Resource Person Directions

Activity 10 (cont.)

DO YOU KNOW HOW TO MATCH OBJECTS?

ANSWER KEY

ENVELOPE #1

Contents: 4 marbles

4 paper cups

Task: Place one marble in each cup.

ENVELOPE #2

Contents: 4 pegs

Minature peg board

Task: Place one peg in each hole.

ENVELOPE #3

Contents: 4 cups

4 saucers

Task: Place one cup in each saucer

Activity 10 (cont.)

ANSWER KEY (cont.)

ENVELOPE #4

Contents: 4 pencils

4 small tablets

Task: Place one pencil with each tablet.

ENVELOPE #5

Contents: 4 small plastic bowls

4 plastic spoons

Task: Place one spoon in each plastic bowl

Unit III

Module 4

Field Supervisor Directions

ACTIVITY 11 - FIELD ACTIVITY

PURPOSE OF THE ACTIVITY

1. To make trainees aware of the many math games that can be used to help children begin to develop skills.

2. To provide trainees with an opportunity to use the knowledge and information they have acquired in developing mathematical skills with young children.

PROCEDURES

1. Be familiar with the activity.
2. Be available to answer questions.
3. Review the list of games. Have the trainee tell how each game will help children develop a particular mathematical skill. Have trainee identify the mathematical skill for each game.

Unit III

Module 4

Resource Person Directions

ACTIVITY 12 - LEARNING NUMBER NAMES

EQUIPMENT AND MATERIALS

Trainee:

Activity Folder U3-M4-A11

Resource Person:

None

DIRECTIONS

Trainee:

1. Read the activity by yourself.

2. Find a partner and do Exercise A. Then do Exercise B.

(Continued on next page)

MODE OF INSTRUCTION

(Individual)

(Small Group)

Resource Person (is) (is not) needed

Unit III

Module 4

Resource Person Directions

Activity 12 (cont.)

Resource Person:

1. Be available to answer questions.

Unit III

Module 4

Resource Person Directions

ACTIVITY 13 - RATIONAL COUNTING (PART I)

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A13

Box of building blocks

Resource Person

Box of building blocks

Answer Key

DIRECTIONS

Trainee

1. Read the activity by yourself.

2. Find a partner and do the exercises.

MODE OF INSTRUCTION

(Individual)

(Small Group)

Resource Person ___ is / (is not) needed

Unit III

Module 4

Resource Person Directions

Activity 13 (cont.)

Resource Person

1. Be familiar with the activity.

2. Be available to answer questions.

3. Have Answer Key available for trainees.

ANSWER KEY

FOR CHART

A	B	C
STEPS	MATCHING OBJECTS	GROUPING OBJECTS
1	✓	
2	✓	✓
3	✓	✓
4	✓	✓

Unit III

Module 4

Resource Person Directions

ACTIVITY 14 - RATIONAL COUNTING (PART II)

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A14

Magazines

Scissors

Paste

Resource Person

Magazines

Scissors

Paste

MODE OF INSTRUCTION

Individual

Small Group

Resource Person is not need

(Continued on next page)

Unit III

Module 4

Resource Person Directions

Activity 14 (cont.)

DIRECTIONS

Trainee

1. Read the activity by yourself.

2. Do the exercise in this activity.

3. Show the exercise to your Resource Person when you have finished it.

Resource Person.

1. Be familiar with the activity.

2. Be available to answer questions.

3. Look over the groupings. There should be at least four. One for each step. Check to be sure that the grouping goes with the trainee's step.

Unit III

Module 4

Resource Person Directions

ACTIVITY 15 - WHAT WE HAVE LEARNED

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A15

Resource Person

None

DIRECTIONS:

Trainee

Read the activity by yourself.

Resource Person

Be available to answer questions.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person is / (is not) needed

Unit III

Module 4

Resource Person Directions

ACTIVITY 16 - PLANNING AND MAKING A MATHEMATICS GAME

EQUIPMENT AND MATERIALS

Trainee

Activity Folder U3-M4-A16

File cards

Resource Person

File cards

DIRECTIONS

Trainee

1. This activity is divided into two parts.

(Continued on next page)

MODE OF INSTRUCTION

(Individual)
Small Group
Resource Person (is) needed
is not

Resource Person Directions

Activity 16 (cont.)

DIRECTIONS

Trainee

2. Read the activity and follow the directions for each part.

Resource Person

1. Be familiar with the entire activity, especially Part One.

2. Remember, Part One is to be done in class and Part Two will be done outside of class.

3. Go over with the trainee, Sheet #1 - plan for making a math game. Check to make sure that it contains all the parts that are found on an activity card. These parts are:
   - Title
   - Author/Publisher
   - Instructor

Activity 16 (cont.)

- Purpose
- Number of Children
- What To Do
- Outcome

Check to be sure that the game goes along with the objective. Check to be sure that the trainee has kept the list of things in mind found on page 127.

4. If a trainee has done all of Item #3 correctly, tell her to place her plan on a card and go on with the activity.

5. If a trainee has not done all of Item #3 satisfactorily, review it with the trainee and have her repeat Part I of this activity.

6. No trainee can go on to Part II, until all of Item #3 has been satisfied.

Unit III

Module 4

Field Supervisor Directions

ACTIVITY 16 - PLANNING AND MAKING A MATHEMATICS GAME

EQUIPMENT AND MATERIALS

PURPOSE

To determine if trainee has made a satisfactory math game.

PROCEDURES

1. Be familiar with this activity, especially Part II.

2. Part II is to be completed by the trainee outside of class.

3. Trainee will notify you when he has completed Part II. You should then arrange to visit him.

4. Trainee is to have three things for you:

   - the plan for the game on a file card;

   - the game that he has made;

Field Supervisor Directions

Activity 16 (cont.)

- Sheet #2 which should contain a drawing of the game and all the information that is on the file card.

5. Check to make sure that:

   - the trainee has all the items listed in Item #4;
   - the trainee's game goes along with the plan for the game.
   - it conforms to all things to be kept in mind listed on page 127.
   - Sheet #2 is complete.

6. You are to collect Sheet #2.

7. Trainee has completed Part II of this activity, if all the things listed in Item #5 are satisfactory.

Field Supervisor Directions

Activity 16 (cont.)

8. If trainee has not done all of Item #5 satisfactorily, have him repeat Part II.

9. No trainee can go on to the next activity until all of Item #5 has been satisfied.

10. Give Activity 17 to trainees who have satisfactorily completed Part II. Tell them to put their games in a safe place.

Unit III

Module 4

Field Supervisor Direction

ACTIVITY 17 - MASTERY FIELD ACTIVITY

PURPOSE OF THE ACTIVITY

1. To determine if trainee can teach a lesson and an original game which will give children an understanding of objects and location of objects in space.

PROCEDURES

1. Read trainee's directions for the field activity.

2. Trainee will notify you of time or times to visit to observe her.

3. Criteria for mastery of the activity:

   A. The Lesson

      . Use the observation sheet on the next page as criteria for mastery of the lesson.

      . 85% mastery is acceptable.

Unit III

Module 4

Field Supervisor Directions

Activity 17(cont.)

OBSERVATION FORM

NAME: _____

DATE YOU OBSERVED: _____

---

1. What was the lesson about? _____

_____

_____

2. Write an objective for the lesson _____

_____

_____

3.

A. Did the children learn what the teacher wanted them to?

_____Yes _____No

B. How do you know? _____

_____

_____

Activity 17 (cont.)

C. If there were one or two children who did not learn, what did the teacher do about it?

_____

_____

_____

_____

_____

_____

_____

5. Did the teacher feel that the lesson worked?

_____Yes _____No

Field Supervisor Direction

Activity 17 (cont.)

B. The Game

. Use the following items as criteria for mastery

- Does the game teach the skill the trainee stated?

- Does the objective meet the skill the trainee stated it was going to teach?

- Is the game fun?

- Can the children play the game

. 85% mastery is acceptable

C. Trainee must have at least 85% mastery for the lesson and 85% mastery for the game to have mastered this activity.

Unit III

Module 4

Field Supervisor Directions

Activity 17 (cont.)

4. If trainee has not mastered this activity, go over with the individual what was wrong. Give the trainee time to correct what was wrong and reschedule another time to observe for mastery.

Module 4

For Activity 4

You will need to do the following:

1. Collect the object or objects needed for each task.
2. Write each task on a 3 X 5 card.
3. Place the object or objects and task in an envelope.

For Activity 8 and Activity 14

You will need to have the trainees bring in old magazines.

For Activity 9

You will need a box of building blocks.

For Activity 10

You will need to do the following:

1. Collect the object or objects needed for each task.
2. Write each task on a 3 X 5 card.
3. Place the object or objects and task in a manila envelope.

*All the objects used in this activity can be purchased at any 5 & 10 stores in the toy department.

Unit III

Module 4

Trainee Directions

MODULE 4

BEGINNING THE DEVELOPMENT OF MATHEMATICAL SKILLS WITH YOUNG CHILDREN

TRAINEE: _____

INSTRUCTOR: _____

FIELD SUPERVISOR: _____

	How Many?		
Class Sessions			
Field Visits			

Unit III

Module 4

NAME: _____

Date Started: _____ Date Completed: _____

TRAINEE ACTIVITY RECORD

ACTIVITY	EQUIPMENT AND MATERIALS	COMPLETED	TIME	COMMENTS, PROBLEMS OR SPECIAL PLANS
1. Introduction	Activity Folder U3-M4-A1			
2. Learning About Objects	Activity Folder U3-M4-A2			
3. What Are Objects	Activity Folder U3-M4-A3 File Cards			
4. Learning To See Objects: Likes And Differences	Activity Folder U3-M4-A4 Manila Envelope			
5. Location of Objects	Activity Folder U3-M4-A5 File Cards			
6. Describing Objects According to Shape	Activity Folder U3-M4-A6 File Cards			
7. Field Activity	Activity Folder U3-M4-A7	77		
8. Grouping Objects	Activity Folder U3-M4-A8 Magazines Scissors Paste			

Unit III

Module 4

ACTIVITY	EQUIPMENT AND MATERIALS	COM-PLET-ED	TIME	COMMENTS, PROBLEMS OR SPECIAL PLANS
9. Grouping Objects: Alike And Different	Activity Folder U3-M4-A9 Box of building blocks			
10. Matching Objects	Activity Folder U3-M4-A10			
11. Field Activity	Activity Folder U3-M4-A11			
12. Learning Number Names	Activity Folder U3-M4-A12			
13. Rational Counting (Part I)	Activity Folder U3-M4-A13			
14. Rational Counting (Part II)	Activity Folder U3-M4-A14 Magazines Scissors Paste			
15. What We Have Learned	Activity Folder U3-M4-A15			
16. Planning And Making A Mathematics Game	Activity Folder U3-M4-A16 File Cards			
17. Mastery Field Activity	Activity Folder U3-M4-A17			

Unit III

Module 4

GLOSSARY

1. Classifying - Children see that things are grouped according to the most obvious feature, such as putting all the blocks together that are square. Square is the classification for grouping the blocks.

2. Comparing and Contrasting - Children see what is alike about things. Children see what is different about things.

3. Concrete Objects - Objects that children can hold, touch, and are used to.

4. Formal Experience - One that is planned by the teacher such as lessons, activities and environmental, conditions

Unit III

Module 4

GLOSSARY

5. Game - An activity that can be done by more than one child which is fun for them to do.

6. Grouping Objects - Putting the objects together according to something they have in common.

7. Informal Experience - One that is not planned by the teacher.

8. Location of Objects - Where objects are in space.

9. Matching Objects - Being able to see how one object goes together with another object and putting the two objects together.

Unit III

Module 4

GLOSSARY

10. Mathematics - Is the quantifying or counting of objects.

11. Number Names - The names for numbers.

12. Quantifying - Is counting.

13. Rational Counting - Counting objects in order with meaning

14. Seeing Patterns - Children see that although objects can be different, there is at least one thing about all of them that is the same.

Unit III

Module 4

Trainee Directions

ACTIVITY 1 -INTRODUCTION

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A1

DIRECTIONS

Read the activity by yourself.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person is (is not) needed

Unit III

Module 4

ACTIVITY 1

INTRODUCTION

What is mathematics? Mathematics is the quantifying or counting of objects. There are two major areas which are quantifiable: Objects and the location of objects in space.

For a preschool child, objects to be quantified or counted are objects which he knows about because they are a real part of his world. Such things as how many cookies can he have at snack time, the number of chairs at a table, or the number of puzzles in the puzzle rack are the kinds of objects that are meaningful and therefore quantifiable for a young child.

Where objects are in relation to the child or others as well as the form or shape of things are mathematical concepts which young children need to begin to understand. Discussions about the record player being on top of the cabinet or Leon playing under the table help children to be able to locate and describe where objects are in relation to other things. Learning about simple shapes also helps children describe kinds of objects.

Unit III

Module 4

Activity 1 (cont.)

A preschool child needs to learn the vocabulary for objects and locations in space and the beginning steps for the counting of objects. He needs to learn and understand these things so that he can begin to get the necessary skills in mathematics.

In this module, you will be learning some things that will help you begin the development of mathematic skills with preschool children. You will be learning how to help children learn the vocabulary for objects and locations in space. You will be learning how to help children learn the beginning steps for the counting of objects. You will also be learning how to help children organize this information so that it has meaning to them.

Unit III

Module 4

Trainee Directions

ACTIVITY 2 - LEARNING ABOUT OBJECTS

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A2

DIRECTIONS

1. Read the activity by yourself.

2. Follow the directions in the activity.

MODE OF INSTRUCTION

(Individual)
Small Group
Resource Person (is) / is not needed.

Unit III

Module 4

ACTIVITY 2

LEARNING ABOUT OBJECTS

Objects are all around us. There are many different kinds of objects and they are there for many reasons. We know their names, we know how some objects are alike and we know how they are different. We know why objects are here and we almost always know what they are used for. Look around the room that you are in right now. There are so many different kinds of objects that in order for you to make any kind of sense of them, you must find ways of organizing them into different groups. You could organize them by what they are-for example you could look at all of the chairs in the room. You can organize them by color-for example, you could look at everything that is tan in the room. You could organize them by size - for example, you could look at everything that is bigger than you in the room. You could organize them by shape-for example, you could look at everything that is round in the room. You could organize them by function - for example, you could look at everything that is for writing on in the room. You could organize them by more than one thing - for example, you could look for color and shape or size and color or function and what they are.

Activity 2 (cont.)

Young children cannot do what you can do. They do not always know what objects are. They do not always know what they are called. They do not know that objects have some things that are alike and some things that are different. They do not know how to organize objects in different ways. We must teach it to them. We must teach them:

1. What objects are;
2. What objects are called;
3. That objects have different names;
4. That some objects have different shapes;
5. That some objects have different colors;
6. That some objects do different things;

We teach children about objects in different ways and at different times of the day. On the next page is a chart. Some of the different times of the school day that you can teach children about objects are listed on the left side of the chart. Across the top of the chart are some of the things we want to teach children about objects. Write in each block one sentence that tells what you would teach a child about objects during that

Activity 2 (cont.)

time of day. For example the first block of your chart is teaching children what objects are during free play time. A sentence in that block could be, " I would ask a child to bring me a record." You must decide what you would teach the child about objects and the way you would teach her during that time of the school day.

If you have any questions, ask your Resource Person. If not, fill out the chart.

Unit III

Module 4

	WHAT OBJECTS ARE	WHAT OBJECTS ARE CALLED	OBJECTS AND SHAPES	OBJECTS AND COLOR	OBJECTS AND WHAT THEY DO
FREE PLAY TIME					
CIRCLE TIME					
STORY TIME					
SNACK TIME					
MUSIC					
OUTDOOR PLAY TIME					
LUNCH TIME					
REST TIME					

Activity 2 (cont.)

Learning about objects helps children organize a lot of things in a more meaningful way to them. They begin to organize by:

1. Seeing patterns - many objects are round such as cookies and oranges.

2. Comparing and contrasting - many objects are alike in that they are the same shape. Many objects are different in that they might vary in size or color.

3. Classifying - all objects with a certain shape, such as round, are classified as circles.

Unit III

Module 4

Trainee Directions

ACTIVITY 3 - WHAT ARE OBJECTS?

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A3

File Cards

DIRECTIONS

1. Read the activity by yourself and follow the directions.

2. Go over the chart with your Resource Person when you have finished.

MODE OF INSTRUCTION

(Individual)	
Small Group	
Resource Person	(is) / is not needed

Unit III

Module 4

ACTIVITY 3

WHAT ARE OBJECTS?

Children enter preschool with some understanding of objects. They can identify some of them. They can label some of them. An object is a picture, a piece of furniture, a window, a bookcase, a toy, a milk carton to name just a few. Children need to learn and understand what the objects, in their world, are. They need to learn and understand that the objects in their world are not the same as the people in their world.

Children need to learn what objects are because:

A. It will help get them ready for quantifying objects.

B. It will help them learn ways to describe objects to others.

C. It will help them become aware of some of the features of objects such as color, size, shape.

Activity 3 (cont.)

Your job is to help children learn what objects are. You can do this, for example, by labeling all the objects in the room and calling the objects by their names when opportunities arise. This will help children learn what the object is and its name. This will also help children learn to match the object with the correct name. You help children learn what objects are by giving them informal and formal experiences. Informal experiences are not planned. It is using the many events that happen during a preschool day to help children learn what objects are such as snacktime. When you give the children oranges, you can help them learn that oranges are round. You can help them learn to match that round object with the name "orange". You can help them learn that many things are round such as oranges and cookies.

- -

Look at the chart on page 28. Some of the different times of the preschool day are listed on the left side of the chart.

Activity 3 (cont.)

In the column marked A, write one sentence that tells what objects you would help children learn to identify for each time listed in a block above the heavy line.

When you have finished, go on with this activity.

You help children learn what objects are also by giving them formal experiences. Formal experiences are planned by the teacher such as lessons, activities and environmental conditions.

- -

Turn to your chart on page 29. On the left side of the chart below the heavy line are three blocks - lesson, activity, environmental condition. In Column A, next to lesson, list a lesson that you would use to help children learn what objects are. Next to activity, list an activity that you would use to help children learn what objects are. Next to environmental condition, list an environmental condition

Activity 3 (cont.)

that you would set up to help children learn what objects are. When you have finished, go on with this activity.

- -

You have just learned how to help children learn and understand what objects are. You have also learned that you can use formal and informal experiences to help children learn this.

When you help children learn what objects are, you are helping children organize this information so that it has meaning to them. You do this by teaching them to:

1. See patterns
2. Compare and contrast
3. Classify

- -

Turn to your chart on page 28. Look at the things that you have written in each block in Column A. For each thing in

Activity 3 (cont.)

Column A, list the cognitive skill or skills you are teaching them in Column B.

When you have finished, go over your chart with your Resource Person. Then write the lesson, activity and environmental condition you listed on cards and place them in your file box.

Activity 3 (cont.)

WHAT ARE OBJECTS?

	A	B
FREE PLAY TIME		
STORY TIME		
SNACK TIME		
MUSIC		
LUNCH TIME		
LESSON		
ACTIVITY		
ENVIRONMENTAL CONDITION		

Unit III

Module 4

Trainee Directions

ACTIVITY 4 - LEARNING TO SEE OBJECTS: LIKES AND DIFFERENCES

EQUIPMENT AND MATERIALS:

Activity Folder U3-M4-A4

Manila Envelope

DIRECTIONS:

1. Read the activity by yourself.

2. Do the exercises in this activity.

3. Go over Exercise B with your Resource Person when you have finished it.

MODE OF INSTRUCTION

Individual

Small Group

Resource Person is / is not needed

Unit III

Module 4

ACTIVITY 4

LEARNING TO SEE OBJECTS: LIKES AND DIFFERENCES

Children need to learn and understand how objects can be alike and how objects can be different. They need to learn and understand that objects can be alike because they have the same function or are the same color, shape or size. Children need to learn and understand that objects can be different because they have different functions or are different colors, shapes or sizes.

Children need to learn to see how objects are alike and different because:

- It will help them learn how to organize objects so that the objects have meaning to them and to others.

Your task is to help children learn these things. You do this by using objects that the children know. For example, the round shape of a cookie is the shape of many objects in the

Activity 4 (cont.)

room; the dolls in the doll corner are different because they are different sizes. You do this by using lessons, activities and environmental conditions and the many different times during a preschool day.

When you help children learn how objects are alike and different you are teaching them to:

1. See patterns - Many objects in the room have the round shape of a cookie.

2. Compare and contrast - Three chairs are alike in that they have the same function. The three chairs are different in that they vary in size.

3. Classify - All objects with two long sides and two short sides such as doors and tables are rectangles.

By teaching them to see patterns, compare and contrast and classify, you are helping children organize the information they are getting so that it has meaning to them.

Activity 4 (cont.)

EXERCISE A

Find a partner and get a manila envelope from your Resource Person. You and your partner will be using it. Each manila envelope contains some objects and small envelopes. Each object and envelope has a card attached to it which contains a task for you and your partner to do. For each object and small envelope, you are to do the following:

1. One trainee is to read the card and do the task on the card. The other trainee will use the card to check to see if the task was done correctly.

2. Now get another envelope. This time, the trainee who did the checking will do the task on the card. The other trainee will check to see if the task was done correctly.

Activity 4 (cont.)

3. Repeat these steps until you have used all the things in your envelope.

4. If you have any questions, see your Resource Person.

5. When you have finished this exercise, go on to the next one.

Activity 4 (cont.)

EXERCISE B

Children need to learn and understand how objects can be alike and how objects can be different.

How would you help children do this?:

1. How would you help children learn and understand how objects arealike? List one lesson, one activity, and one environmental condition that you would use.

   A.

   B.

   C.

Activity 4 (cont.)

Exercise B (cont.)

2. How would you help children learn and understand how objects are different? List one lesson, one activity, one environmental condition that you would use.

A.

B.

C.

3. How would you help children learn and understand how objects are alike or different during lunchtime? Write your answer in the space below.

Activity 4 (cont.)

Exercise B (cont.)

4. Look at all the things that you have listed in this exercise. Do any of the things that you have listed help children learn what objects are? For each thing on your list that does place a check next to it.

5. Review this exercise with your Resource Person. Make sure you can tell how each thing you have a check besides can help children learn what objects are.

6. After you have reviewed this exercise with your Resource Person, write the things on your lists on cards. For each thing that you checked, make a note on the card that it also help children learn what objects are. Place these cards in your file box.

Unit III

Module 4

Trainee Directions

ACTIVITY 5 - LOCATION OF OBJECTS

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A5

DIRECTIONS

1. Read this activity by yourself.

2. Do the exercise.

3. When you have finished the exercise, go over it with your Resource Person.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) / is not needed

Unit III

Module 4

ACTIVITY 5

LOCATION OF OBJECTS

Location of objects means where objects are in space. Children need to learn and understand where objects are in relation to themselves. They need to learn and understand where objects are in relation to other objects.

Children need to learn these things because it helps them to organize the information in a meaningful way. They need to learn these things because it helps them to tell others of their understanding of where objects are in space.

Your task is to help children learn and understand where objects are in space. You do this by teaching them the words which tell where objects are in space. Some of these words are: up, down around, on, over and under. However, children must know more than the words. They must be taught the meanings of words for where objects are in space.

Activity 5 (cont.)

You help children learn these things by using lessons, activities, environmental conditions and informal experiences. For example, to learn the words "up" and "down", you can give the children oranges and have them hold them. Have the children raise their arms above their heads while holding the oranges. They learn that this is "up". Have the children lower their arms until the oranges touch the floor. They learn that this is "down". This helps children learn and understand two words that tell where objects are in space. This will help children learn and understand where the objects are in relation to themselves.

Another example is placing a book on a table. Have the children tell you where the book is. The book is on the table. This helps children learn and understand a word that tells where objects are in space. It also helps children learn where an object is in relation to another object.

When you help children learn where objects are in space, you are helping children organize the information so that it has meaning to them. You do this by teaching them to:

Activity 5 (cont.)

1. See patterns

2. Compare and contrast

3. Classify

Activity 5 (cont.)

EXERCISE

Your job is to help children learn and understand the words that tell where the objects are in space.

1. Can you think of any words that children need to learn and understand that tell where objects are in space? Write your list of words below.

Share your list with another trainee. Add any new words that you don't have to your list.

Activity 5 (cont.)

2. Choose one or two words from your list. Write a lesson plan for teaching children the word or words you picked. Write your lesson plan below.

Activity 5 (cont.)

3. Look at your lesson plan. Does it help children learn:

   A. What objects are?

   B. How objects are alike and different?

   If it does, write it across the bottom of the lesson plan. Place a star in front of it.

4. Your lesson should help children organize the information so that it has meaning to them. Look at the lesson plan you have just written.

   . Does it teach children to see patterns? If yes, tell how.

Activity 5 (cont.)

. Does it teach children to compare and contrast? If yes, tell how.

. Does it teach children to classify? If yes, tell how.

Activity 5 (cont.)

Do not worry if you did not answer "yes" to all three questions. You should have answered "yes" to at least one question and told how. If you did this, show this exercise to your Resource Person.

If you did not answer "yes" to any of the questions, look at your lesson plan again. Look very carfully and try to answer the questions. If you still cannot answer "yes" to at least one of the questions, go back to Item #2 in this exercise and write another lesson plan. Then try Item #4 again.

You have finished this exercise only when you have completed all the items and have shown this exercise to your Resource Person.

Unit III

Module 4

Trainee Directions

ACTIVITY 6 - DESCRIBING OBJECTS ACCORDING TO SHAPE

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A6

File Cards

DIRECTIONS

1. Read the activity by yourself.

2. Do the exercise.

3. Review the exercise with your Resource Person.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) needed
is not

Unit III

Module 4

ACTIVITY 6

DESCRIBING OBJECTS ACCORDING TO SHAPE

Children need to learn that the objects in their world can be described according to shape such as circle, square, triangle, and rectangle. They need to learn that shapes are one way to describe an object. They need to learn that objects can be called by the name of a shape.

Children need to learn these things because it helps them:

- Organize the objects in their world.
- Learn how to describe objects.
- Learn how to look at objects according to some special features.
- Locate objects in space by shape.

Activity 6 (cont.)

Your task is to help children learn that the objects in their world can be described by shape. Your task is to teach them the names of common shapes - circle, square, triange, rectangle. Your task is to teach them that the objects they see have a certain shape. You do these things by using concrete objects such as blocks. Concrete objects are objects that children can hold, touch, and are use to. You use formal and informal experiences to help children learn all these things.

Activity 6 (cont.)

EXERCISE A

1. List two lessons that can help children learn to describe objects according to shape using blocks.

   A.

   B.

2. List two activities that can help children learn to describe objects according to shape using blocks.

   A.

   B.

3. List two environmental conditions that can help children learn to describe objects according to shape using blocks.

   A.

   B.

Show this to your Resource Person. Share your list with other trainees. Write each item on your list on cards and put them in your file box.

Unit III

Module 4

Trainee Directions

ACTIVITY 7 - FIELD ACTIVITY

PURPOSE OF THE ACTIVITY

1. To provide trainees with an opportunity to use the knowledge and information they have acquired in developing mathematical skills with young children.

2. To make trainees aware of the many mathematical games that can be used to help children begin to develop skills.

Unit III

Module 4

ACTIVITY 7

FIELD ACTIVITY

You can help children begin to develop mathematical skills by using lessons, activities and environmental conditions to give them the needed experiences. Sometimes, you will want to use games to help children begin to develop their mathematical skills.

A game is an activity that is done by more than one child which is fun for them to do. Games serve a purpose. The purpose is to give children a chance to practice a skill that they have learned.

There are three major kinds of math games you may select from to use with your children. These three major kinds of games are:

Activity 7 (cont.)

1. Commercial Games

These are games that are put together by different companies and are sold to people. This kind of game usually contains the directions for playing the game and all the pieces of equipment needed to play the game.

2. Books of Games and Activities

These are games that can be found in books or in educational magazines. For this kind of game, you will usually find:

- the name of the game
- equipment needed to play the game.
- directions for playing the game
- what skill or skills the game will help children develop

Activity 7 (cont.)

3. Teacher-Made Games

These are games that are planned and made by teachers for the children in their classroom.

You probably already use math games in your preschool center. What kinds do you usually use? What kinds of math games are in your preschool center?

You have been learning how to help children learn:

- what objects are;
- how objects are alike and different;
- the words that tell where objects are in space
- how objects are described

Your task is to do the following:

1. Locate some commercial math games and/or some books of games and activities.

Activity 7 (cont.)

A. Try to find a game that you can use to help children learn what objects are.

B. Try to find a game that you can use to help children learn how objects are alike.

C. Try to find a game that you can use to help children learn how objects are different.

D. Try to find a game that you can use to help children learn the words that tell where objects are in space.

E. Try to find a game that you can use to help children learn what objects are called.

2. For each commerical math game, you will need to write the following information:

- the name of the game
- the publisher
- number of children that can use the game

Activity 7 (cont.)

- what math understandings the game will help the children begin to develop
- the price of the game

For each game you locate in books of games and activities, you will need to write the following information:

- the title of the book or magazine
- the author of the book.
- if it is a magazine, write the month and year.
- name of the game
- the skill it will help children develop
- the equipment and material needed
- the number of children that can play the game
- directions for playing the game

Activity 7 (cont.)

Be prepared to discuss your math games with your Field Supervisor. Be prepared to tell how each game will help children learn math. Bring your math games to class. Share them with other trainees. Place the games you found on the appropriate cards. Get a divider for your file box from your Resource Person and label it "Games". Place your game cards in this section of your file box.

Unit III

Module 4

Trainee Directions

ACTIVITY 8 - GROUPING OBJECTS

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A8

DIRECTIONS

1. Read the activity by yourself.

2. Follow the directions.

3. Review Exercise A with your Resource Person when you have finished it.

MODE OF INSTRUCTION

(Individual)		
Small Group		
Resource Person	(is) / is not	needed

Unit III

Module 4

ACTIVITY 8

GROUPING OBJECTS

Once children have learned what objects are and how to locate them, the next step in learning about mathematical skills is grouping objects. Grouping objects is putting them together according to something they have in common. Size, shape, color or function are some of the things objects have in common. For example, you can place a blue block, a red bead, a blue peg and a blue dish from the doll corner on a table. Ask the children to take all of the things that are blue and put them together on the other side of the table. You have now had the children group objects according to a common feature-the color blue.

Grouping objects is important for young children to learn because it provides them with the necessary base for being able to learn more advanced kinds of math when they enter elementary school. For preschool children the basic understandings in order to learn mathematics later on are:

Activity 8 (cont.)

1. Seeing Patterns - such as shape, size or color of a group of objects.

2. Comparing and Contrasting - such as seeing what is alike and/or different about a group of objects.

3. Classifying - such as putting all of the objects together which have the same shape.

To help children learn how to group objects, you must begin by putting together a group of objects yourself. Put together the group of objects in front of the child or children. Then give them objects just like the objects you have. Ask them to make a group just like the group you just made. When you first teach children to group objects, you must teach them to group by one thing they have in common only. It can be by color or size or shape but it can not be by color and shape or color and size.

Activity 8 (cont.)

After the children can group objects just like you, the next step is to ask them to group some objects without your having to group them first. For example, you can set a few objects on a table and ask the children to make a group of all of the objects that are round. This time the children will have nothing to copy. They will have to do it all by themselves. Do not put more than four objects out at one time. More than four objects may be too hard for a preschool child to work with. Before you have children group objects by themselves, make sure they have had lots of chances to make groups like yours. Give them as many chances as they seem to need to practice each step in grouping before you go on to the next step.

The last step in learning how to group objects is to learn to group them according to more than one thing that they have in common. An example of this step of grouping objects is to have children make a group that is all the same color and has the same function. You could put a red round bead, and a blue peg, a red square bead and a green oval bead on

Activity 8 (cont.)

a tray on the table. Ask the children to put all of the things that are the same color and can be strung in a box next to the tray. They must put only the red round bead and the red square bead in the box. If they put the green oval bead in the box you can tell them that although the bead can be strung it is not the same color as the other beads. Tell them that now they have to make groups according to two things - color and what the beads can be used for. This is the hardest part of grouping objects for young children. It may take them a long time to learn how to do it. Do not give up. They will learn how to do it after they have had lots of time to practice.

CAN YOU GROUP OBJECTS?

Can you make a group in which the objects have color in common? Get a magazine and some scissors and paste from your Resource Person. Cut out from the magazine and paste five objects that are the same color in the space on the next page.

Activity 8 (cont.)

Activity 8 (cont.)

Can you make a group in which the objects have size in common? Draw your group of objects below?

Activity 8 (cont.)

Can you make a group in which the objects have shape in common? Cut out objects from your magazine and paste them in the space below.

Activity 8 (cont.)

Can you make a group in which the objects have a function in common? Draw your group below.

Activity 8 (cont.)

Have you drawn the right groups? Find another trainee and show your groups to him. This trainee will check to see if you have drawn the right group for each question.

- -

Your task is to help children learn about and understand grouping objects. Your task is to help children learn how to make groups that have something in common. You can do this by providing your children with the right kinds of experiences such as lessons, activities and environmental conditions.

Activity 8 (cont.)

EXERCISE A

GROUPING OBJECTS

1. In this activity, you had to draw or make four groups. Pick one of the four groups you made and write a lesson plan that will help children learn how to make groups like the one you picked. Write your lesson plan on Sheet #1 included in this exercise.

2. Pick another group from the four groups you drew. Write an activity that will help children learn how to make groups like the one you picked. Write your activity on Sheet #2.

3. Pick another group from the four groups you drew. Write a plan for arranging the environment that will help children learn how to make groups like the one you picked. Write your plan on Sheet #3.

4. When you have done all of the above, review your sheets with your Resource Person. Share your plans with other

Activity 8 (cont.)

trainees. Write your plans on the appropriate cards and place them in your file box.

Unit III

Module 4

Activity 8 (cont.)

LESSON PLAN
#1

Unit III

Module 4

Activity 8 (cont.)

ACTIVITY
#2

Unit III

Module 4

Activity 8 (cont.)

ARRANGING THE ENVIRONMENT

#3

Unit III

Module 4

Trainee Directions

ACTIVITY 9 - GROUPING OBJECTS: ALIKE AND DIFFERENT

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A9

Box of Building Blocks

DIRECTIONS

1. Read the activity by yourself.

2. Follow the directions.

MODE OF INSTRUCTION

(Individual)		
Small Group		
Resource Person	(is) / is not	needed

Unit III

Module 4

ACTIVITY 9

GROUPING OBJECTS: ALIKE AND DIFFERENT

When we group objects, we arrange the objects according to some thing they have in common such as size, shape, color or function. Children need to learn and understand how a group of objects can be alike. Children need to learn and understand how a group of objects can be different. They need tc learn and understand that a group of objects can be alike because they have the same function or are the same size, shape or color. They need to learn and understand that a group of objects can be different because they have a different function or are different colors, shapes and/or sizes.

When a child puts all the blue blocks together, he has made a group. The child has put all the objects with one color together. The objects in this group are alike because they are the same color.

Activity 9 (cont.)

When we place eight blue blocks of two sizes in front of a child, we can have the child tell if all the blocks in the group are the same size. The objects in this group are different because some of the blocks are small and some of the blocks are large. Through experiences such as these, the child learns and understands how groups of objects are alike and how groups of objects are different.

When we help children learn and understand these things, we are helping children learn different ways of looking at groups of objects in their world. We are helping children learn how to classify groups of objects.

Your task is to help children learn and understand these things. Your task is to help children learn and understand how groups of objects can be alike and different.

ALIKE AND DIFFERENT

How can a group of objects be alike? How can a group of objects be different? Use the box of building blocks your

Activity 9 (cont.)

Resource Person has to make a group of objects that are alike and to make a group of objects that are different. When you have done this, show your groups to the Resource Person. Be able to tell how one of your groups of objects is alike and how one of your groups of objects is different.

How would you help children learn how groups of objects can be alike and different? List two lessons, two activities and two environmental conditions that would help children learn and understand how groups of objects can be alike and different. List them below:

A. Two lessons:

1.

2.

Activity 9 (cont.)

B. Two activities:

1.

2.

C. Two environmental conditions:

1.

2.

Find another trainee. Share the things you have listed with her. Describe for her each thing on your list. As you describe each thing, she will try to answer the question, "Does it help children learn how groups of objects can be alike or different?". If she says "Yes" place a check next to it on your list. Repeat these steps until you have done ever, thing on your list.

If you have a check next to everything on your list, put the them on cards and in your file box. Then go on to the next

Activity 9 (cont.)

activity. For everything you do not have a check beside, write another lesson, activity or environmental condition for your list. Repeat the above steps. You have finished this activity only when you have a check next to each thing on your list. If you need help, see your Resource Person.

Unit III

Module 4

Trainee Directions

ACTIVITY 10 - MATCHING OBJECTS

EQUIPMENT AND MATERIALS

Activity Folder U3-M4 A10

Manila envelope

File cards

DIRECTIONS

1. Read the activity by yourself.

2. Follow the directions in the activity.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) / is not needed

Unit III

Module 4

ACTIVITY 10

MATCHING OBJECTS

Matching objects is being able to see how one object goes together with another object and putting the two objects together. This is called a one-to-one relationship. For example, children learn to put one shoe on one foot.

Children need to learn to match objects because it helps them see how objects are related to each other. It helps them see the relationship between objects and themselves. It also helps them learn how to see patterns.

To help children learn how to match objects, you must begin by teaching children how one object goes with another object. For example, one coat goes with one coat hook. You must give experiences, during the preschool day, which give the children opportunities to see how to match objects.

When you help children learn how to match objects, you must start with the objects in their world that they know. Once the children can match the objects in their world, the next step is to have them match objects that they are less familiar

Activity 10 (cont.)

with. For example, you may place four paper cups and four blue balls on a table in front of a child. The child must place one blue ball in each paper cup. The child is learning how some objects in his world, that he is less familiar with, are related to each other.

Children need a lot of practice to learn how to match objects. They need many formal and informal experiences.

Activity 10 (cont.)

EXERCISE A

DO YOU KNOW HOW TO MATCH OBJECTS?

Get a manila envelope from your Resource Person. It contains many objects. Your task is to see the many different ways objects go together and to put the objects together. When you have finished, show your Resource Person how you have put the objects together.

EXERCISE B

List two lessons, two activities and two environmental conditions that you can use to help children learn matching objects. Write your list below.

A. Lessons that help children learn matching objects:
   1.

   2.

Activity 10 (cont.)

B. Activities that help children learn matching objects:

1.

2.

C. Environmental conditions that help children learn matching objects:

1.

2.

Activity 10 (cont.)

Find another trainee. Share the things you have listed with that person. Describe for the other trainee each thing on your list. As you describe each thing, he will try to answer the question, "Does it help children to learn about matching objects?". Place a check next to each thing the trainee answers "Yes" to. Repeat these steps until you have described all of the things on your list.

Now look at the things on your list and try to answer this question - "What else about objects does each thing on your list help children to learn?". If it does, write what it helps children to learn under it.

If you have a check next to each thing on your list, put those things on cards and in your file box. Then go on to the next activity.

For everything you do not have a check beside, write another lesson, activity, or environmental condition for your list. Repeat the above steps.

You have finished this activity only when you have a check next to each thing on your list. If you need help, see your Resource Person.

Unit III

Module 4

Trainee Directions

ACTIVITY 11 -FIELD ACTIVITY

PURPOSE OF THE ACTIVITY

1. To make trainees aware of the many math games that can be use to help children begin to develop skills.

2. To provide trainees with an opportunity to use the knowledge and information they have acquired in developing mathematical skills with young children.

Unit III

Module 4

ACTIVITY 11

FIELD ACTIVITY

Math games are often used to help children develop their skills. In this field activity, you are to:

1. Locate some commercial math games and/or some books of games and activities.

   A. Try to find a game that you can use to help children learn grouping objects.

   B. Try to find a game that you can use to help children learn how groups of objects are alike.

   C. Try to find a game that you can use to help children learn how groups of objects are different.

   D. Try to find a game that you can use to help children learn matching objects.

Activity 11 (cont.)

2. For each commercial math game, you will need to write the following information:

- the name of the game
- the publisher
- number of children that can use the game
- what math understandings the game will help the children begin to develop.
- the price of the game.

For each game you locate in books of games and activities, you will need to write the following information:

- the title of the book or magazine
- the author of the book
- If it is a magazine, write the month and year.
- name of the game
- the skill it will help children develop
- the equipment and material needed

Activity 11 (cont.)

- the number of children that can play the game
- directions for playing the game

Be prepared to discuss your math games with your Field Supervisor. Be prepared to tell how each game will help children learn math. Bring your math games to class. Share them with other trainees. Place the games you found on the appropriate cards and place them in your file box.

Unit III

Module 4

Trainee Directions

ACTIVITY 12 - LEARNING NUMBER NAMES

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A11

DIRECTIONS

1. Read the activity by yourself.

2. Find a partner and do Exercise A. Then do Exercise B.

MODE OF INSTRUCTION

Individual
Small Group
Resource Person is / is not needed

Unit III

Module 4

ACTIVITY 12

LEARNING NUMBER NAMES

To help children begin to learn about numbers, they need to learn the number names from one through ten. Number names are the names for numerals, such as one is the number name for the amount one. The numeral 1 is the way we show the word for the amount one. Children need to learn number names so that they can become familiar with them. Children need to learn number names so they will have a foundation for learning more ideas that have to do with numbers later on.

Your task is to help children learn number names. You can do this everyday in a preschool. When you tell a child, "Here is one cookie for you.", you are helping a child learn a number name. You can help a child learn number names by using them whenever the opportunity arises during a pre-school day.

You can also help children learn number names by using rote counting. Rote counting is saying the number names

Activity 12 (cont.)

in order from one through ten. You can help children learn to do this by using songs and games.

Remember, - Although children can say the number names, it does not mean that they understand what the number names mean. It only means that they can say the number names.

Activity 12 (cont.)

EXERCISE A

- Find a partner and list five songs that are used in a preschool to help children learn number names. Write your list below:

1.

2.

3.

4.

5.

- Share your list of songs with other trainees. Write them on the appropriate cards and place them in your file box.

Activity 12 (cont.)

EXERCISE B

What other ways do you know about that can help children learn number names? Can you think of some finger plays? If so, write them down in the space below.

Can you think of some books? If so, write them down in the space below.

Activity 12 (cont.)

Exercise B (cont.)

Have we left anything out? If so, write them down in the space below.

Share your ideas with other trainees. Write them on the appropriate cards and place them in your file box.

Unit III

Module 4

Trainee Directions

ACTIVITY 13 - RATIONAL COUNTING (PART I)

EQUIPMENT AND MATERIALS

Activity folder U3-M4-A13

Box of building blocks

DIRECTIONS

1. Read the activity by yourself.

2. Find a partner and do the exercises.

MODE OF INSTRUCTION

(Individual)

(Small Group)

Resource Person is needed (is not)

Unit III

Module 4

ACTIVITY 13

RATIONAL COUNTING

(PART I)

Rational counting is counting objects in order with meaning. Children need to learn how to do rational counting. They need to learn how to use number names in matching objects. By that we mean being able to put a number name with each object when counting. They need to learn how to use number names in grouping objects. By that we mean being able to put a number name with each object, counting in order, to make a group of a certain number.

Children need to learn to do these things because it will help them learn:

1 That each number name can be put together with an object.

. That number names can be used to see if groups of objects are alike or different

Activity 13 (cont.)

- That one number name can represent a group of objects.

Your task is to help children learn and understand these things. When you do this, you are helping children:

- Begin to see the relationship between an object or objects and a number name;
- Learn how to see patterns;
- Learn another way of finding out how groups of objects can be alike and different;
- Learn another way of organizing the information they are getting so it has meaning to them.

You help children learn and understand using numbers in matching and grouping objects by doing the following:

1. Matching objects starting with the number one. For example, you place four objects on the table in front of the child. The child must count the

Activity 13 (cont.)

objects. You do this by having the child move one object and say "One", then move the second object and say "Two". Continue to do this until the child has counted all of the objects.

. The child is now beginning to attach an object to each number name as he counts in order.

2. Tell the child a number and he makes the group. For example, you place four objects on the table in front of the child. You tell the child the number four and have him make a group that has four objects in it. As the child makes the group he will move one object and say "One". Then he will move another object next to it and say "Two". The child will continue to do this until he has made a group that has four objects in it.

Activity 13 (cont.)

- The child is attaching a number name to each object as he makes a group.

- The child is also beginning to learn that one number name can represent a group.

3. Using the matching of objects with number names to see if one of the two groups has more than, fewer than or the same number of objects than the other group. Place two groups of objects on the table in front of the child. The child must find out which group has more objects. To do this, he must count the number of objects in each group. For each group, the child will say the number name for each object as he counts them. When he has finished counting both groups, he will have a number name for each group.

   - The child is attaching a number name to each object in each group.

Activity 13 (cont.)

- The child is learning that one number name can represent a group.

- The child is beginning to learn that for the number names used in counting in order, one number name can represent more than or less than another number name.

4. Tell the child a number and he makes a group. Then tell the child another number and he makes a group. When making each group, the child will attach a number name to each object and will continue to do this until he has made a group that contains the certain number of objects. After the child has made both groups, have him tell you which group contains more objects.

   - The child is attaching a number to each object in each group.

Activity 13 (cont.)

. The child is learning how many objects are needed in a group to match a number name.

To help children learn each of these steps, you must use lessons. Once they have learned to do a step, you can use activities and environmental conditions to have them practice the things they have learned in the lessons that you have taught them.

Activity 13 (cont.)

EXERCISE A

To do this exercise, you will need to find a partner and get the box of building blocks from your Resource Person. When you have done this, read and follow the directions.

Directions

1. In this activity, you learned four steps to use to help children learn and understand using numbers in matching and grouping objects. For this exercise, you and your partner are to do the following:

   A. Read each step again and do each step with your partner using the building blocks.

   B. This means that each of you will take turns being the child.

   C. After each of you has had the opportunity to do the same step, try to see how that step helps the child learn the things or things listed under it.

Activity 13 (cont.)

. Continue to do Items A, B. and C in this exercise until both of you have done all four steps.

- -

Activity 13 (cont.)

EXERCISE B

When children are using numbers in grouping objects, they are at the same time using numbers in matching objects. Find a partner and do the following:

1. Read the steps again that you learned that can be used to help children learn and understand using numbers in matching and grouping objects. They start on page 99.

2. Do each step with your partner using the building blocks.

3. Look at the chart on the next page. It contains three columns. In Column A, the number of each step is listed. Column B is labeled "Matching Objects". Column C is labeled "Grouping Objects".

4. For each step, you are to determine if it is about matching objects, grouping objects or both.

Activity 13 (cont.)

5. As you determine what each step is about, place a check in the proper box in the proper column. Do not worry if you have more than one check for a few steps.

A	B	C
STEPS	MATCHING OBJECTS	GROUPING OBJECTS
1		
2		
3		
4		

6. Get the Answer Key from your Resource Person and check your answers.

Activity 13 (cont.)

Look at your chart. Look at Step #2. You should have a check in the box in Column B and C. In this step, the child is matching an object to a number name to make a group of objects. Matching objects is a part of the process that children use when they are making groups of objects using rational counting.

Unit III

Module 4

Trainee Directions

ACTIVITY 14 - RATIONAL COUNTING (PART II)

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A14

Magazines

Scissors

Paste

DIRECTIONS

1. Read the activity by yourself.

2. Do the exercise in this activity.

3. Show the exercise to your Resource Person when you have finished it.

MODE OF INSTRUCTION

(Individual)

Small Group

Resource Person (is) / is not needed

Unit III

Module 4

ACTIVITY 14

RATIONAL COUNTING

(PART II)

In the previous activity, you learned that rational counting is counting objects in order, using number names, with meaning. You also learned that you help children begin to learn rational counting by helping them learn how to use number names in matching and grouping objects.

For children to be able to use numbers with meaning, they must be able to:

- say a number and know inside their heads how many objects the number stands for.

- show or give the correct number of objects almost immediately when the teacher says a number.

Before you can help children learn to do these things, they must first be able to count the objects in a group, matching

Activity 14 (cont.)

each object to a number name. You can help children to learn to use numbers with meaning by doing the following steps:

1. Given a group of objects, the child will be able to take part of the group and attach the appropriate name to it. The child will then finish counting the rest of the objects by matching the next number name to each object being counted. For example, given a group of five objects the child may pick up two objects at one time and say "Two". Then the child will pick up the next object and say "Three". The child will continue to do this until all the objects have been counted.

2. When told a number name, the child will be able to make a group that contains the correct number of objects. The child will do this by taking some of the objects for the group and say the appropriate number name. The child

Activity 14 (cont.)

will then continue to add objects to the group, one at a time saying the correct number name until he has made the group. For example, told the number name "four", the child may pick up two objects at one time and say "Two". Then the child wil will pick up another object to add to his group and say "Three". The child will continue to do this until he has made a group of four objects.

3. Given a group of objects, the child can look at the group and tell you how many objects are in the group.

4. When told a number, the child can get the correct number of objects to match the number without counting each object separately or some of the objects out loud as he makes the group.

To help children learn each of these steps, you must use lessons. Once they have learned to do a step, you can use activities and environmental conditions to have them practice the things they have learned in the lessons that you have taught them.

Activity 14 (cont.)

Remember, children grow and develop at different rates. Each child grows and develops at his own special rate. Therefore, you may have some children who can already do some of the steps and some children who cannot do any of these steps. You may have some children who are able to learn all of the steps and some children who are able to learn only some of the steps. This means that you must determine for each child what he knows in relation to each step, what he needs to know in relation to each step, and is he ready to learn a particular step.

When you help children learn to use numbers with meaning, you are helping them learn that:

1. Numbers can stand for a group of objects.

2. Groups of objects can be organized according to numbers as well as size, shape, color and function.

3. They can show a group of objects by using a symbol which in this case is a number.

Activity 14 (cont.)

EXERCISE

To do this exercise,you will need magazines, scissors and paste. Your task is to plan different kinds of grouping that a child might do in each step.

Show each grouping with pictures of objects that you have cut out of magazines. Paste each grouping in a box on the page. Paste only one grouping on a page. The pages are included in this activity.

Under each grouping, write out the step that you would use. When you have finished, show your pages to your Resource Person. Then share your groupings with the other trainees.

Activity 14 (cont.)

PLACE A GROUPING HERE:

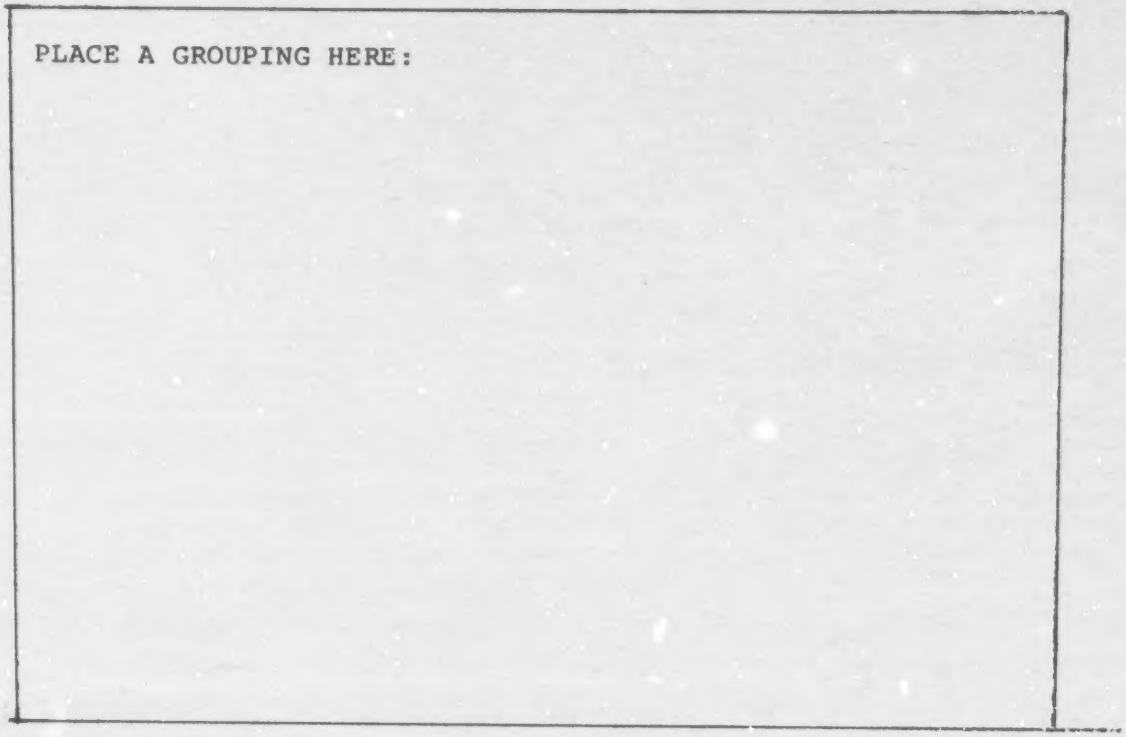
STEP

Activity 14 (cont.)

PLACE A GROUPING HERE:

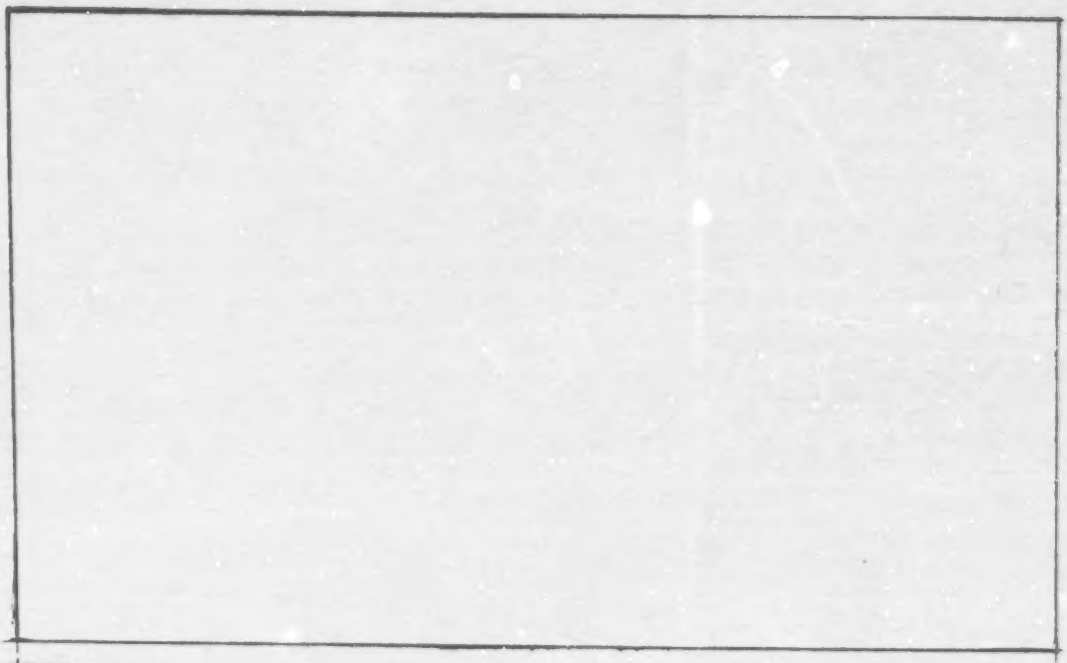
STEP

Activity 14 (cont.)



STEP

Activity 14 (cont.)



STEP

Unit III

Module 4

Trainee Directions

ACTIVITY 15 - WHAT WE HAVE LEARNED

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A15

DIRECTIONS

Read the activity by yourself.

MODE OF INSTRUCTION

(Individual)
Small Group
Resource Person is / is not needed

Unit III

Module 4

ACTIVITY 15

WHAT WE HAVE LEARNED

We have learned many things about beginning the development of mathematical skills with preschool children.

WHAT HAVE WE LEARNED?

1. Children need to develop certain mathematical skills to get ready for quantifying.

   - What objects are
   - How objects are alike and different
   - Where objects are located in space
   - How we count in order
   - Rational counting

2. Children learn mathematics by:

   - Touching, seeing and hearing;

   - Being able to do things with objects before and while they are learning to understand what numbers mean.

Activity 15 (cont.)

3. The reason why children need to learn the above mathematical skills.

   . Children need to get a foundation for organizing and locating objects. They must get this foundation before they can learn the kind of mathematics that is taught in elementary school.

4. The appropriate math skills for preschool children.

   . Are skills that help children see patterns, compare and contrast and classify groups of objects. This is sometimes called the beginning of logical thinking.

Unit III

Module 4

Trainee Directions

ACTIVITY 16 - PLANNING AND MAKING A MATHEMATICS GAME

EQUIPMENT AND MATERIALS

Activity Folder U3-M4-A16

File cards

DIRECTIONS

1. This activity is divided into two parts.

2. Read the activity and follow the directions for each part.

MODE OF INSTRUCTION

Individual		
Small Group		
Resource Person	is / is not	needed

Unit III

Module 4

ACTIVITY 16

PLANNING AND MAKING A MATHEMATICS GAMES

Introduction

In a previous activity, you learned that a game is an activity to be done by more than one child which is fun for them to do, and the purpose of the game is to give children a chance to practice a skill that they have learned. You also learned that there are three major kinds of games: commercial math games, books of games and activities and teacher-made games.

In this activity, you are going to learn how to plan and make a mathematics game. For this reason, this activity has been divided into two parts. Part one is about planning a game. Part two is about making a game.

Activity 16 (cont.)

PART ONE - PLANNING A MATH GAME

To plan a math game that you want to use the children, you must do the following steps:

1. Decide and write down what mathematical skills you want to help children develop.

2. Decide and write down what the game will be.

3. Next, write a card for your game that contains all the things you write for an activity.

When you are planning your math game, you should keep the following things in mind:

Activity 16 (cont.)

1. The game must be simple.

2. The game must be one that children can do.

3. The game must be made of materials that cannot be torn, destroyed, or are harmful to children.

4. The game should not contain anything that children can put in their mouths and swallow such as staples, tacks, paper clips or paper fasteners.

5. The kinds of materials that you would want to use in your game - Below is a list of some of the materials you would want to use:

   - heavy cardboard
   - plywood (with a clear, non-toxic finish)

Activity 16 (cont.)

- magazines
- contact paper
- indelible magic markers
- paint
- felt
- plastic containers
- paper towel rolls

You have just learned how to plan a math game. Your task is to plan a math game that you can use with your children. Write your plan on Sheet #1 which is included in this activity. When you have finished writing your plan, check it to see if you have kept the list of things in mind that you have just read about.

When you are satisfied with your plan, show it to your Resource Person. When you Resource Person has reviewed your plan, write it on a card and place it in the games section of your file box. Then go on to Part II.

Activity 16 (cont.)

DO NOT GO ON TO PART II, UNTIL YOUR RESOURCE PERSON HAS LOOKED OVER YOUR PLAN!

Activity 16 (cont.)

MY PLAN FOR A MATH GAME

#1

Activity 16 (cont.)

PART II - MAKING A MATH GAME

Your task is to make a math game using the plan that you wrote in Part I. You are to make your game at home. You are to do the following:

1. Make a math game using the plan that you wrote in Part I.

2. Make a drawing of the math game (what the game will look like) Make your drawing on Sheet #2 which is included in this activity.

3. Under your drawing, write everything that is on your game card.

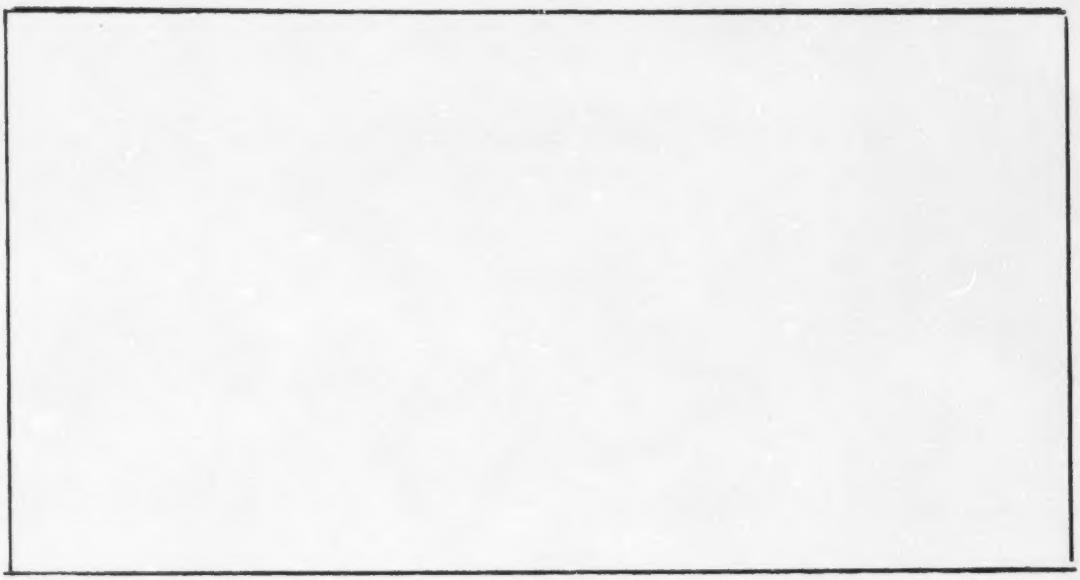
Notify your Field Supervisor when you have done these three things. She will want to look at the game you made, the game card that you wrote and Sheet #2. You must have all three things to show her. She will want to keep Sheet #2.

Activity 16 (cont.)

MY MATH GAME

#2

DRAWING



Unit III

Module 4

Trainee Directions

ACTIVITY 17- MASTERY FIELD ACTIVITY

PURPOSE OF THE ACTIVITY

1. To determine if trainee can teach a lesson and an original game which will give children an understanding of objects and location of objects in space.

Unit III

Module 4

ACTIVITY 17

MASTERY FIELD ACTIVITY

For this activity, you will need:

1. your plan for a game for Activity 16;

2. the game that you made in Activity 16.

You are to do the following:

1. Write a lesson plan that will help children learn the same skill that you used for planning your math game.

2. You are to teach the lesson that you have written a lesson plan for.

3. You are to teach the game that you planned and made in Activity 16.

Schedule a time or two different times with your head teacher or center supervisor to teach the lesson and to teach the game. Make sure you show them your lesson plan and your game.

Activity 17 (cont.)

. The game is fun.

. The children can play the game.

Activity 17 (cont.)

Notify your Field Supervisor so that she can plan to observe you doing these two things. You may to have to arrange for two different times for her to visit. Make sure she knows the two times and what you will be doing each time.

You should have a copy of your lesson plan and your plan for a game ready to give her before you begin to do either of these two things.

Your Field Supervisor will observe you teaching your lesson to see how closely you followed your lesson plan and how well the lesson worked.

Your Field Supervisor will observe you teaching your game to see if:

- The game teaches the skill you stated.
- The objective meets the skill you said you were going to teach.

UNIT III

MODULE 4

PROBLEM SOLVING

Unit III

Module 4

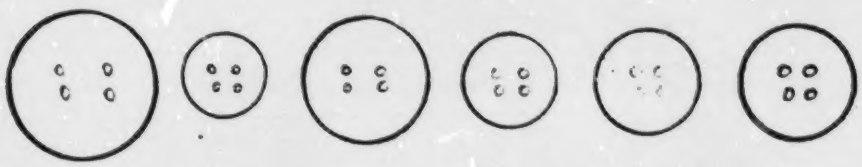
PROBLEM SOLVING

1. Why do we need to help children learn and understand what are objects?

2. How can learning about the location of objects help children develop mathematical skills in later years?

3. Read the paragraph below. Then answer the questions.

   The teacher has shown John a group of 6 buttons. All the buttons in the group are the same color, but they are not the same size. The teacher asked John, "How are the buttons alike? How are the buttons different?" Here are the buttons John saw:



Problem Solving (cont.)

The teacher was helping John to organize his information on how objects are alike and different, so that it has meaning to him. What was the teacher teaching John to do? Write your answer in the space below:

4. Look at your activity list. How do all of the skills you learned in this module before rational counting help children learning rational counting.